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Letter to the Editor

Upper abdominal pain and hypovolemic shock in pregnancy

1. Introduction

Aneurysms of the splenic artery account for 60% of visceral artery aneurysms.[1,2] Although the prevalence of this entity is low, it may be underestimated due to the fact that most cases remain asymptomatic. It occurs predominantly in females, many of them pregnant by the time the lesion is first discovered. Splenic artery aneurysms (SAAs) are usually saccular and occur at a bifurcation in the splenic helium. Most of them are ≤2 cm in diameter. Multiple aneurysms are present in approximately 20% of patients.[3] The rupture of SAA during pregnancy produces hypovolemic shock and can be devastating for both the mother and the fetus, with maternal and fetal mortality rates of 75% and 95%, respectively.[4]

2. Case report

Here we report the case of a previously healthy 35-year-old woman, who was admitted to our hospital because of sudden upper abdominal pain and syncope. She was in the 28th week of her third pregnancy. Upon physical examination she was pale, diaphoretic, nauseous, and in extreme discomfort. The abdomen was rigid and diffusely tender with signs of peritoneal irritation. Abdominal ultrasound revealed free intraperitoneal fluid and fetal heart beats. The patient was immediately taken to the operation room for exploratory laparotomy. Approximately 1500 mL of blood (including clots), caused by an actively bleeding artery at the splenic hilum, was evacuated from the peritoneal cavity and proximal ligation of the splenic artery and splenectomy were performed. Subsequently, the fetus was delivered by Cesarean section. During surgery, the patient received transfusion of four packed red cells units, and perfusion of vasoactive drugs was initiated due to hemodynamic instability. The fetus received cardiopulmonary resuscitation for 30 minutes and eventually died. The patient stayed at the intensive care unit for 2 days and was discharged home on the 7th postoperative day.

3. Discussion

Spontaneous rupture of a splenic artery aneurysm (SAA) during pregnancy is a rare, life-threatening surgical entity. The diagnosis of this condition is difficult because it shares similar signs and symptoms with other common emergencies such as placental abruption, uterine rupture, amniotic fluid embolism, perforated ulcer, or pulmonary thromboembolism. Most SAAs remain asymptomatic and may be incidentally found due to the growing use of angiography, high-resolution computed tomography, or ultrasound for investigation of other lesions.[5]

However, SAA rupture may require emergency surgery. In such cases, clinical manifestations usually include abdominal pain in the epigastrium or the left upper quadrant that radiates to the left flank or shoulder (Kehr's sign), anemia, acute abdomen, peritonism, hemodynamic instability, hemorrhagic shock, or fetal death, especially in pregnant women, who are not in labor.

Different risk factors have been associated with SAA including vascular connective tissue disorders (Marfan syndrome, Ehlers–Danlos syndrome, congenital laxity of the arterial wall, fibromuscular dysplasia, etc.), trauma, substance abuse, portal hypertension, atherosclerosis, or advanced age.[6] However, the higher prevalence among pregnant women, especially multiparous mothers, might be related both to the effects of estrogen and progesterone on arterial walls and to the increased volume overload that occurs during pregnancy. Therefore, most ruptures tend to occur during the third trimester and have a cumulative effect with each successive pregnancy.

Existing evidence suggests that SAAs, which are symptomatic, enlarging, more than 2 cm in diameter, or detected in pregnancy or child-bearing age entail high risk of rupture,[2] and therefore, prophylactic screening is advisable in these patients. Although aneurysms associated with a low risk of rupture may be managed conservatively, false aneurysms or high-risk aneurysms should be treated by endovascular therapy as a first approach, embolization or stent grafting,[7] or surgical treatment.[8]

In conclusion, abdominal ultrasound is a safe, fast, easy way to obtain essential information concerning pregnant patients with SAAs, thereby shortening the treatment period, and once an aneurysm breaks, laparoscopy is a safe procedure to be used in these patients.

Conflicts of interest

No author has financial arrangements or potential conflicts of interest related to the material in this article. Each author

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has participated sufficiently in the work to take public responsibility for the content of the paper and has approved the final version of the manuscript. All the work is original research and has not been sent to consideration to any journal and has not been previously published.

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